



Title: PREPARATION OF
THIOREDOXIN AND THIOREDOXIN
REDUCTASE ON OIL BODIES
Inventor(s): Maurice M. MOLONEY et al.
Appl. No.: 09/897,425

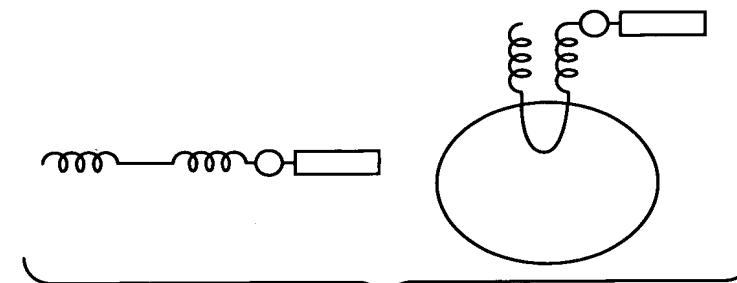


FIG. 1A

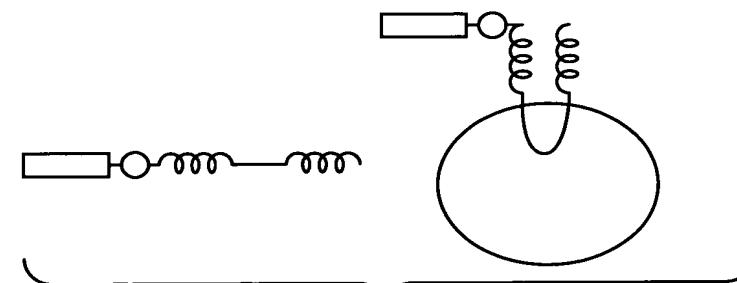


FIG. 1B

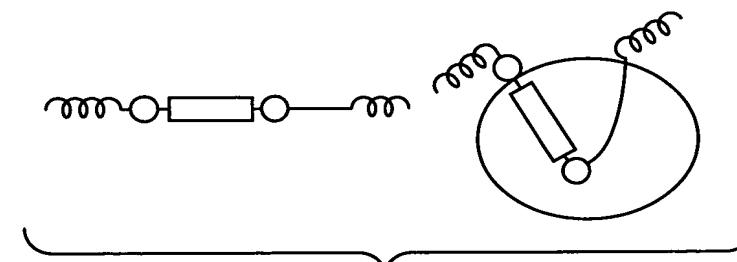


FIG. 1C

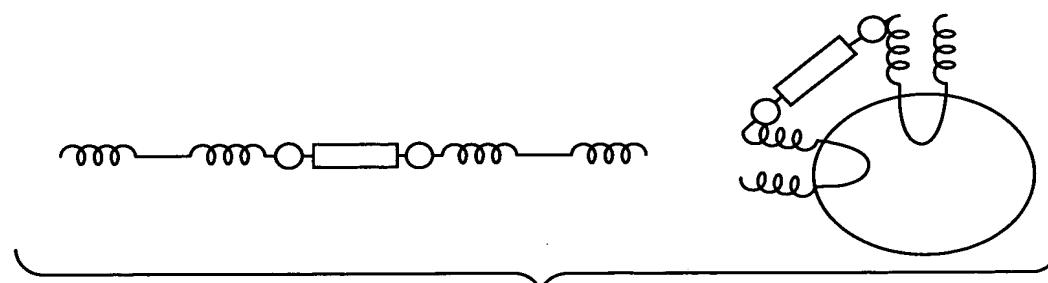


FIG. 1D



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-867 *NcoI* CCATGGCTATA
 -777 CGGAATTGCTGACCTGAAGACGGAACATCATCGTCGGCCTTGGCGATTGCGGCGAAGATGGTCAGCTGGCTTGAGGACGAGAC
 -687 CCCAATCGAGCTGTTGAAAGGTTGTCATTGGGATTGTATACGGAGATTGGTCGTCGAGGGTT
 -597 GCTCTGGAGAAAGAGAGTGCGGTTAGAGAGAGAATTGAGAGGTTAGAGAGAGAATGCGGCGGATGACGGAGGAGACGACGAGG
 -507 ACCTGCATTATCAAAGCAGTGACGTGGTGAATTGGAACTTTAAGAGGCAGATAGATTATTATGTATCCATTTCATTGTC
 -417 TAGAATGTCGCGGAACAAATTAAACTAAATCCTAAATTCTAATTGTTGCAATAGTGATATGTGGCGTATAGAAGGAAT
 -327 CTATTGAAGGCCAAACCCATACTGACGAGCCAAAGGTTGCTTGCCTTATGTTCGGTCATGCCAACGCCACATTCTGAGCTA
 -237 GGCAAAAAACAAACGTGTCTTGAATAGACTCCTCTCGTAACACATGCAGCGGCTGCATGGTGACGCCATTAACACGTGGCTACAATT
 -147 GCATGATGTCCTCATTGACACGTGACTTCGTCCTTCTTAATATCTAACAAACACTCCTACCTCTCCAAAATATACACATC
 -57 TTTTGATCAATCTCTATTCAAATCTCATTCTCTCTAGTAACAGAACAAAAATGGCGGATACAGCTAGAGGAACCCATCACGAT
 34 I I G R D Q Y P M M G R D R D Q Y Q M S G R G S D Y S K S R
 ATCATCGGCAGAGACCAGTACCCGATCATGGCGAGACCGAGACCAGTACCAGATGTCGGACGAGGATCTGACTACTCCAAGTCTAGG
 124 Q I A K A A T A V T A G G G S L L V L S S L T L V G T V I A L
 CAGATTGCTAAAGCTGCAACTGCTGTACAGCTGGTGGTCCCTCCTGTTCTCCAGCCTAACCTGTGGAACTGTCATAGCTTTG
 214 T V A T P L L V I F S P I L V P A L I T V A L L I T G F L S
 ACTGTTGCAACACCTCTGCTCGTTATCTCAGCCAATCCTGTCCCGCTCTCATCACAGTTGCATCTCATCACGGTTTCTTCC
 304 S G G F G I A A I T V F S W I Y K
 TCTGGAGGGTTGGCATTGCCGCTATAACCGTTCTCTGGATTACAAAgtaagcacacatttatcatcttacttcataatttgtgc
 394 atatgtgcattgtgttggatcaattttttggatcaataacaatgtaaataagaattgc
 484 aacatttggtaactaaatacgaatttgccttagctgttgcattgttatcatctata
 574 tacctattgtattgtgaatAGTACGCAACGGGAGAGCACCCACAGGGATCAGACAAGTGGACAGTGCAAGGATGAAGTTGGGAAGCAAA
 664 A Q D L K D R A Q Y Y G Q Q H T G G E H D R D R T R G G Q H
 GCTCAGGATCTGAAAGACAGAGCTCAGTACTACGGACAGCAACATACTGGTGGGGACATGACCGTACCGTACTCGTGGTGGCCAGCAC
 754 T T *
 ACTACTTAAGTTACCCACTGATGTCATCGTCAATAACTCCAATGTCGGGAGTTAGTTATGAGGAATAAAAGTGTTTAGAAT
 844 TTGATCAGGGGGAGATAATAAAAGCCGAGTTGAATCTTTGTTATAAGTAATGTTATGTTGTTCTATATGTC
 CAAATGGTACCGT

FIG. 2



Title: PREPARATION OF
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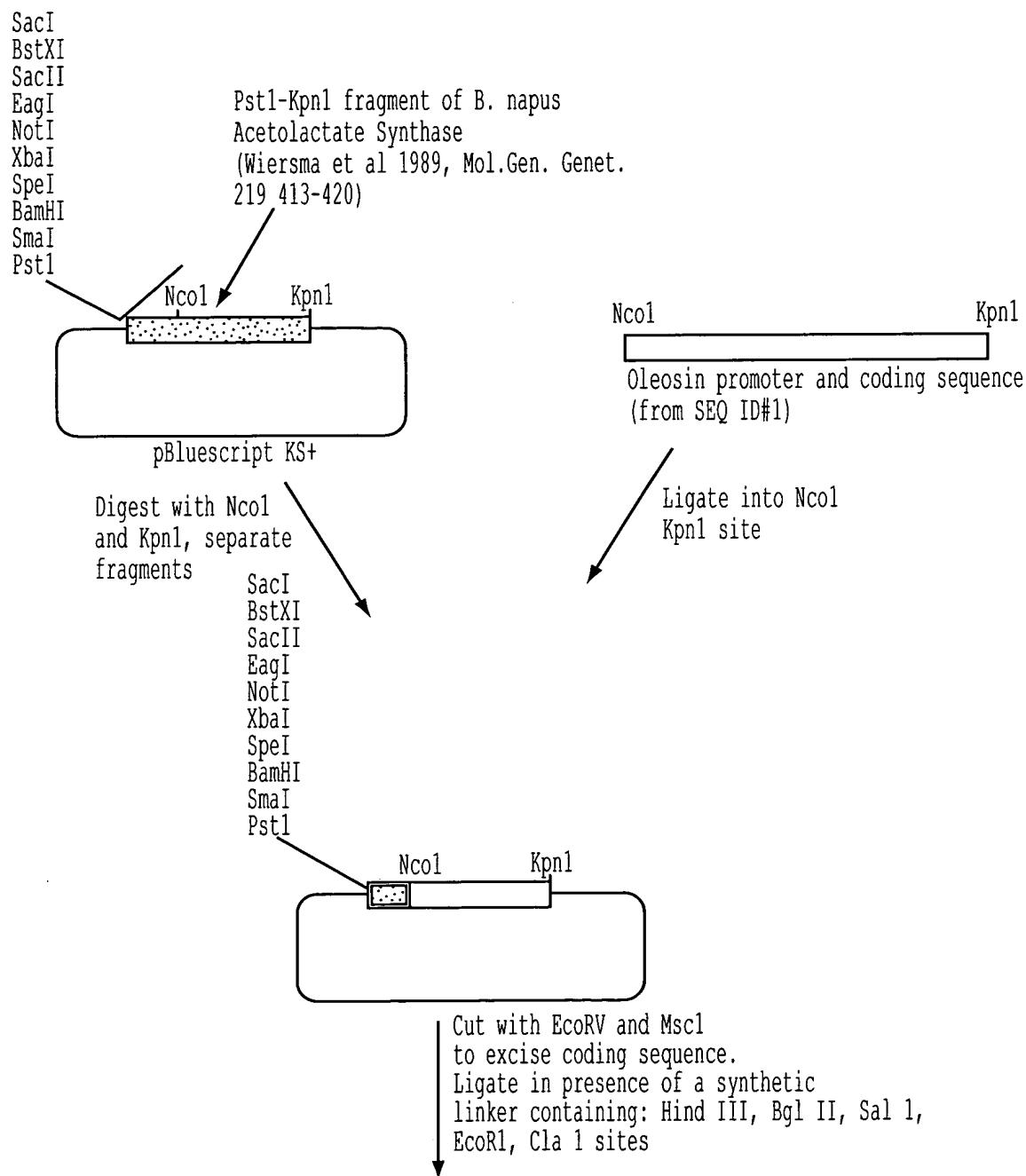


FIG. 3



Title: PREPARATION OF
THIOREDOXIN AND THIOREDOXIN
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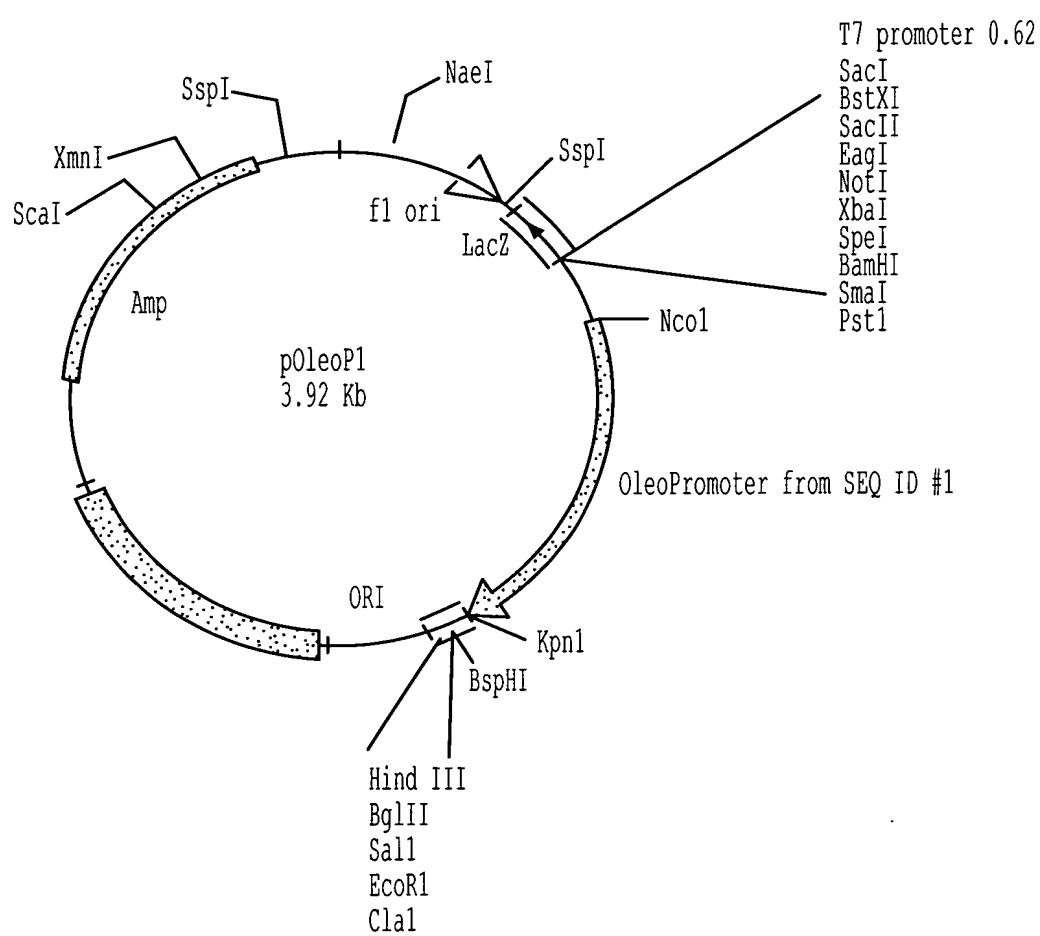


FIG. 3A



Title: PREPARATION OF
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1 ATG GCG GAT ACA GCT AGA ACC CAT CAC GAT GTC ACA AGT CGA GAT CAG TAT CCC CGA GAC 60
1 M A D T A R T H H D V T S R D Q Y P R D 20

61 CGA GAC CAG TAT TCT ATG ATC GGT CGA GAC CGT GAC CAG TAC TCT ATG ATG GGC CGA GAC 120
21 R D Q Y S M I G R D R D Q Y S M M G R D 40

121 CGA GAC CAG TAC AAC ATG TAT GGT CGA GAC TAC TCC AAG TCT AGA CAG ATT GCT AAG GCT 180
41 R D Q Y N M Y G R D Y S K S R Q I A K A 60

181 GTT ACC GCA GTC ACG GCG GGT GGG TCC CTC CTT GTC CTC TCC AGT CTC ACC CTT GTT GGT 240
61 V T A V T A G G S L L V L S S L T L V G 80

241 ACT GTC ATT GCT TTG ACT GTT GCC ACT CCA CTC CTC GTT ATC TTT AGC CCA ATC CTC GTG 300
81 T V I A L T V A T P L L V I F S P I L V 100

301 CCG GCT CTC ATC ACC GTA GCA CTT CTC ATC ACT GGC TTT CTC TCC TCT GGT GGG TTT GCC 360
101 P A L I T V A L L I T G F L S S G G F A 120

361 ATT GCA GCT ATA ACC GTC TTC TCC TGG ATC TAT AAG TAC GCA ACG GGA GAG CAC CCA CAG 420
121 I A A I T V F S W I Y K Y A T G E H P Q 140

421 GGG TCA GAT AAG TTG GAC AGT GCA AGG ATG AAG CTG GGA ACC AAA GCT CAG GAT ATT AAA 480
141 G S D K L D S A R M K L G T K A Q D I K 160

481 GAC AGA GCT CAA TAC TAC GGA CAG CAA CAT ACA GGT GGT GAG CAT GAC CGT GAC CGT ACT 540
161 D R A Q Y Y G Q Q H T G G E H D R D R T 180

541 CGT GGT GGC CAG CAC ACT ACT TAA 564
181 R G G Q H T T * 188

FIG. 4

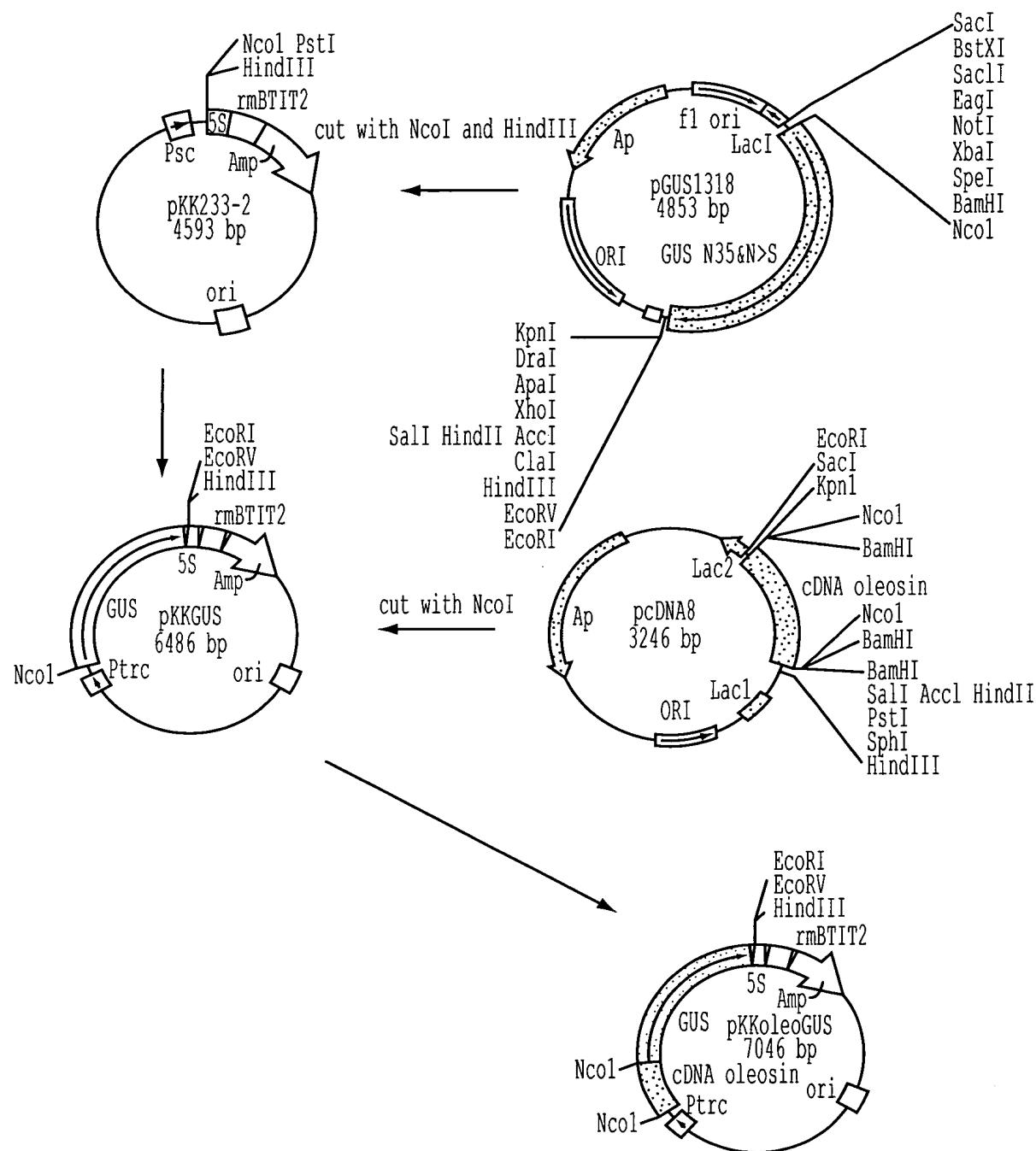


FIG. 5



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HindIII

1	ATAAGCTTGCATGCCCTGCGGAACCTCTGGTAAGCTAGCTCCACTCCCCAGAAACAACCG	60
61	GCGCCAAATTGCCGGAATTGCTGACCTGAAGACGGAACATCATCGTCGGGCTTGGCG	120
121	ATTGCGCGGAAAGATGGGTCAAGCTGGGCTTGAGGACGAGACCCGAATCGAGTCTGTTGA	180
181	AAGGTTGTTCAATTGGGATTTGTATACGGAGATTGGTCGAGAGGTTGAGGGAAAGGA	240
241	CAAATGGGTTGGCTCTGGAGAAAGAGAGTCGCGCTTAGAGAGAGAATTGAGAGGTTA	300
301	GAGAGAGATGCGCGGCGATGACGGGAGGAGACGACGAGGACCTGCATTATCAAAGCA	360
361	GTGACGTGGTGAATTGGAACTTTAACAGGGCAGATAGATTATTATTTGATCCATT	420
421	TCTTCATTGTTCTAGAATGTCGCGAACAAATTAAAAGTAATGGTAAATTTCCTAA	480
481	TTTTGTTGCCAATAGTGGATATGTCGGCGTATAGAAGGAATCTATTGAAGGCCAAACC	540
541	CATACTGACGAGCCAAAGGTTCGTTGCGTTTATGTTCGGTTGATGCCAACGCCA	600
601	CATTCTGAGCTAGGCAAAAAACAAACGTGCTTGAATAGACTCCTCTCGTTAACACATG	660
661	CAGCGGCTGCATGGTACGCCATTAAACACGTGGCCTACATTGATGATGTCCTCATTGA	720
721	CACGTGACTTCTCGTCTCTTCTTAATATATCTAACAAACACTCCTACCTCTTCCAAA	780
781	TATATACACATCTTTGATCAATCTCATTCAAAATCTCATTCTCTAGTAAACAAG	840
	M A D T A R G T H H D I I G R D Q	
841	AACAAAAAAATGGCGGATACAGCTAGAGGAACCCATCACGATATCATCGGCAGAGACCAG	900
	Y P M M G R D R D Q Y Q M S G R G S D Y	
901	TACCGATGATGGGCCGAGACCGAGACCAAGTACAGATGTCGGACGAGGATCTGACTAC	960
	S K S R Q I A K A A T A V T A G G S L L	
961	TCCAAGTCTAGGCAGATTGCTAAAGCTGCAACTGCTGTCACAGCTGGTGGTCCCTCCTT	1020
	V L S S L T L V G T V I A L T V A T P L	
1021	GTTCTCTCCAGCCTTACCCCTGTTGGAAGTGTCAAGCTTGTGACTGTTGCAACACCTCTG	1080
	L V I F S P I L V P A L I T V A L L I T	
1081	CTCGTTATCTCAGCCAATCCTGTCGGCTCTCATCACAGTTGCACTCCTCATCACC	1140
	G F L S S G G F G I A A I T V F S W I Y	
1141	GGTTTTCTTCCTCTGGAGGGTTGGCATTGCCGTATAACCGTTCTTGTGATTAC	1200
	K	
1201	AAGTAAGCACACATTATCATCTTACTTCATAATTGTGCAATATGTGCATGCATGTGT	1260
1261	TGAGCCAGTAGCTTGGATCAATTGGTCAATAACAAATGTAACAATAAGAAATT	1320
1321	GCAAATCTAGGGAACATTGGTAACTAACATCGAAATTGACCTAGCTAGCTTGAATG	1380
1381	TGTCTGTGTATATCATCTATAGTAAATGCTTGGTATGATACCTATTGATTGTGAAT	1440
	Y A T G E H P Q G S D K L D S A R M K	
1441	AGGTACGCAACGGGAGAGCACCCACAGGGATCAGACAAGTTGGACAGTGCAAGGATGAAG	1500
	L G S K A Q D L K D R A Q Y Y G Q Q H T	
1501	TTGGGAAGCAAAGCTCAGGATCTGAAAGACAGAGGCTCAGTACTACGGACAGCAACACT	1560
	G G E H D R D R T R G G Q H T T L V P R	
1561	GGTGGGAACATGACCGTGACCGTACTCGTGGTGGCCAGCACACTCTCGTTCCACGA	1620
	G S M A E I T R I P L Y K G K S L R K A	
1621	GGATCCATGGCTGAGATCACCAGGATGGGTCTGTACAAAGGCAAGTCTCTGAGGAAGGCG	1680
	L K E H G L L E D F L Q K Q Q Y G I S S	
1681	CTGAAGGAGCATGGCTCTGGAGGACTTCCTGCAGAACAGCAGTATGGCATCAGCAGC	1740
	K Y S G F G E V A S V P L T N Y L D S Q	
1742	AAGTACTCCGGCTCGGGAGGTGGCCAGCGTCCCCCTGACCAACTACCTGGATAGTCAG	1800

FIG. 6



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1801	Y F G K I Y L G T P P Q E F T V L F D T TACTTGGGAAGATCTACCTCGGACCCGCCAGGAGTTCACCGTGCTGTTGACACT	1860
	G S S D F W V P S I Y C K S N A C K N H	
1861	GGCTCTCTGACTCTGGTACCCCTATCTACTGAAAGAGCAATGCCGCACAAACAC	1920
	Q R F D P R K S S T F Q N L G K P L S I	
1921	CAGCGCTTCGACCCGAGAAAGTCGTCCACCTCCAGAACCTGGGAAGCCCCTGTCTATC	1980
	H Y G T G S M Q G I L G Y D T V T V S N	
1981	CACTACGGGACAGGCAGCATGCAGGGCATCCTGGCTATGACACCGTCACTGTCTCCAAC	2040
	I V D I Q Q T V G L S T Q E P G D V F T	
2041	ATTGTGGACATCCAGCAGACAGTAGGGCTGAGCACCCAGGGAGCCGGGACGTCTTCACC	2100
	Y A E F D G I L G M A Y P S L A S E Y S	
2101	TATGCCGAATTGACGGGATCCTGGGATGGCCTACCCCTCGCTCGCTCAGAGTACTCG	2160
	I P V F D N M M N R H L V A Q D L F S V	
2161	ATACCCGTGTTGACAACATGATGAACAGGCACCTGGTGGCCCAAGACCTGTTCTCGGTT	2220
	Y M D R N G Q E S M L T L G A I D P S Y	
2221	TACACAGGGTCCCTGCACTGGTGCCCGTGACAGTGCAGCAGTACTGGCAGTTCACTGTG	2280
	Y T G S L H W V P V T V Q Q Y W Q F T V	
2281	GACAGTGTACCATCAGCGGTGTGGTGTGGCCTGTGAGGGTGGCTGTCAAGGCATCTTG	2340
	D S V T I S G V V A C E G G C Q A I L	
2341	GACAGTGTACCATCAGCGGTGTGGTGTGGCCTGTGAGGGTGGCTGTCAAGGCATCTTG	2400
	D T G T S K L V G P S S D I L N I Q Q A	
2401	GACACGGGACACTCCAAGCTGGTCGGGCCAGCAGCGACATCCTAACATCCAGCAGGCC	2460
	I G A T Q N Q Y G E F D I D C D N L S Y	
2461	ATTGGAGCCACACAGAACAGTACGGTAGTTGACATCGACTGCGACAACCTGAGCTAC	2520
	M P T V V F E I N G K M Y P L T P S A Y	
2521	ATGCCCACTGTGGCTTGAGATCAATGGCAAATGTAACCACTGACCCCCCTCCGCCTAT	2580
	T S Q D Q G F C T S G F Q S E N H S Q K	
2581	ACCAAGCCAAAGACCAAGGGCTCTGTACCAAGTGGCTTCCAGAGTGAAATCATTCCAGAAA	2640
	W I L G D V F I R E Y Y S V F D R A N N	
2641	TGGATCCTGGGGATGTTTCATCCGAGAGTATTACAGCGTCTTGACAGGGCAACAAAC	2700
	L V G L A K A I *	
2701	CTCGTGGGGCTGCCAAAGCCATCTGA <u>AAAGCTT</u>	2733

FIG. 6A

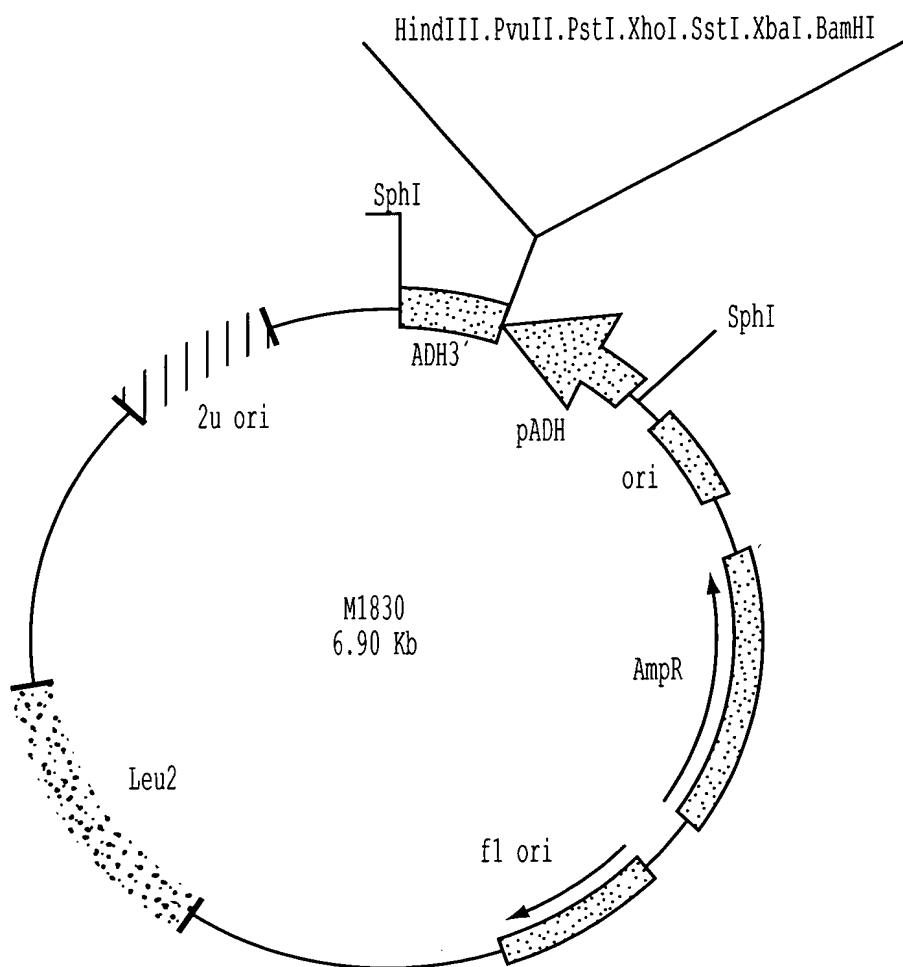


FIG. 7



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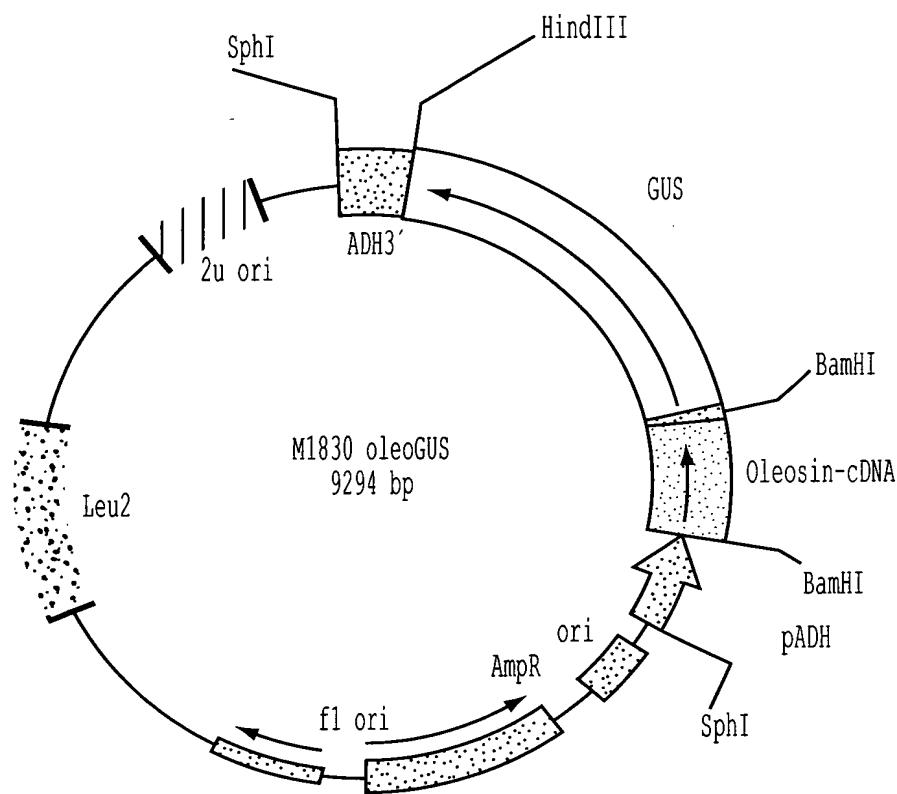


FIG. 8



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Appl. No.: 09/897,425

	10	20	30	40	50	60
TR ATTHIREDB	ATGAATGGTCTCGAAACTCACAACACAAGGCTCTGTATCGTAGGAAGTGGCCAGCGGCA					
	ATGAATGGTCTCGAAACTCACAACACAAGGCTCTGTATCGTAGGAAGTGGCCAGCGGCA					
	70	80	90	100	110	120
TR ATTHIREDB	CACACGGCGGCATTACGCAGCTAGGGCTGAACCTAACCTCTTCTCGAAGGGATGG					
	CACACGGCGGCATTACGCAGCTAGGGCTGAACCTAACCTCTTCTCGAAGGGATGG					
	130	140	150	160	170	180
TR ATTHIREDB	ATGGCTAACGACATCGCTCCCGTGGTCAACTAACAAACCACCGACGTCGAGAAATTTC					
	ATGGCTAACGACATCGCTCCCGTGGTCAACT--CAACCAACCACCGCGT-GAGAAATTTC					
	190	200	210	220	230	240
TR ATTHIREDB	CCCGGATTCCAGAAGGTATTCTCGGAGTAGAGCTACTGACAAATTCCGTAAACAATCG					
	CCCGGATTCCAGAAGGTATTCTCGGAGTAGAGCTACTGACAAATTCCGTAAACAATCG					
	250	260	270	280	290	300
TR ATTHIREDB	GAGCGATTGGTACTACGATATTACAGAGACGGTGACGAAAGTCGATTCTCTCGAAA					
	GAGCGATTGGTACTACGATATTACAGAGACGGTGACGAAAGTCGATTCTCTCGAAA					
	310	320	330	340	350	360
TR ATTHIREDB	CCGTTAACGCTATTACAGATTCAAAAGCATTCTCGCTGACGCTGTGATTCTCGCTACT					
	CCGTTAACGCTATTACAGATTCAAAAGCATTCTCGCTGACGCTGTGATTCTCGCTACT					
	370	380	390	400	410	420
TR ATTHIREDB	GGAGCTGTGGCTAACGGCTTAGCTCGTGGATCTGGTAAGGTTCTGGAGGTTCTGG					
	GGAGCTGTGGCTAACGGCTTAGCTCGTGGATCTGGTAAGGTTCTGGAGGTTCTGG					
	430	440	450	460	470	480
TR ATTHIREDB	AACCGTGGAACTCCGCTTGTGCTGTTGCGACGGAGCTGCTCCGATATTCCGTAACAAA					
	AACCGTGGAACTCCGCTTGTGCTGTTGCGACGGAGCTGCTCCGATATTCCGTAACAAA					
	490	500	510	520	530	540
TR ATTHIREDB	CCTCTTGGCTGATCGGTGGAGGGGATTCTGCAATGGAAGAACACTTTCTTACAAAA					
	CCTCTTGGCTGATCGGTGGAGGGGATTCTGCAATGGAAGAACACTTTCTTACAAAA					
	550	560	570	580	590	600
TR ATTHIREDB	TATGGATCTAAAGTGTATATAATCTGATAGGAGAGATGCTTTAGAGCGCTAAAGATTATG					
	TATGGATCTAAAGTGTATATAATCTGATAGGAGAGATGCTTTAGAGCGCTAAAGATTATG					
	610	620	630	640	650	660
TR ATTHIREDB	CAGCAGCGAGCTTGTCTAACCTAAAGATTGATGTGATTGGAACACTGCTCTGGAA					
	CAGCAGCGAGCTTGTCTAACCTAAAGATTGATGTGATTGGAACACTGCTCTGGAA					
	670	680	690	700	710	720
TR ATTHIREDB	GCTTATGGAGATGGAGAAAGAGATGTGCTTGGAGGATTGAAAGTGAAGAATGTGGTTACC					
	GCTTATGGAGATGGAGAAAGAGATGTGCTTGGAGGATTGAAAGTGAAGAATGTGGTTACC					
	730	740	750	760	770	780
TR ATTHIREDB	GGAGATGTTCTGATTTAAAGTTCTGGATTGTTCTTGCTATTGGTCATGAGCCAGCT					
	GGAGATGTTCTGATTTAAAGTTCTGGATTGTTCTTGCTATTGGTCATGAGCCAGCT					
	790	800	810	820	830	840
TR ATTHIREDB	ACCAAGTTTGGATGGTGGTGTGAGTTAGATCGGATGGTTATGTTGTACGAAGCCT					
	ACCAAGTTTGGATGGTGGTGTGAGTTAGATCGGATGGTTATGTTGTACGAAGCCT					
	850	860	870	880	890	900
TR ATTHIREDB	GGTACTACACAGACTAGCGTCCCGGAGTTTCGCTGCGGGTGTGTTCAAGGATAAGAAG					
	GGTACTACACAGACTAGCGTCCCGGAGTTTCGCTGCGGGTGTGTTCAAGGATAAGAAG					
	910	920	930	940	950	960
TR ATTHIREDB	TATAGGCAAGCCATCACTGCTGCAGGAACACTGGGTGCATGGCAGCTTGGATGCAGAGCAT					
	TATAGGCAAGCCATCACTGCTGCAGGAACACTGGGTGCATGGCAGCTTGGATGCAGAGCAT					
	970	980	990	1000	1010	1020
TR ATTHIREDB	TACTTACAAGAGATTGGATCTCAGCAAGGTAAGAGTGATTGA					
	TACTTACAAGAGATTGGATCTCAGCAAGGTAAGAGTGATTGA					

FIG. 9

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APR 20 2004



1	ATG	AAT	GGT	CTC	GAA	ACT	CAC	AAC	ACA	AGG	CTC	TGT	ATC	GTA	GGA	AGT	GGC	CCA	GCG	GCA	60
1	M	N	G	L	E	T	H	N	T	R	L	C	I	V	G	S	G	P	A	A	20
61	CAC	AGC	GCG	GCG	ATT	TAC	CGA	GCT	AGG	GCT	GAA	CTT	AAA	CCT	CTT	CTC	TTC	GAA	GGA	TGG	120
21	H	T	A	A	I	Y	A	A	R	A	E	L	K	P	L	L	F	E	G	W	40
121	ATG	GCT	AAC	GAC	ATC	GCT	CCC	GGT	GGT	CAA	CTA	ACA	ACC	ACC	ACC	GAC	GTC	GAG	AAT	TTC	180
41	M	A	N	D	I	A	P	G	G	Q	L	T	T	T	T	D	V	E	N	F	60
181	CCC	GGA	TTT	CCA	GAA	GGT	ATT	CAC	GGA	GTA	GAG	CTC	ACT	GAC	AAA	TTC	CGT	AAA	CAA	TCG	240
61	P	G	F	P	E	G	I	L	G	V	E	L	T	D	K	F	R	K	Q	S	80
241	GAG	CGA	TTC	GGT	ACT	ACG	ATA	TTT	ACA	GAG	ACG	GTG	ACG	AAA	GTC	GAT	TTC	TCT	TCG	AAA	300
81	E	R	F	G	T	T	I	F	T	E	T	V	T	K	V	D	F	S	S	K	100
301	CCG	TTT	AAG	CTA	TTC	ACA	GAT	TCA	AAA	GCC	ATT	CTC	GCT	GAC	GCT	GTG	ATT	CTC	GCT	ACT	360
101	P	F	K	L	F	T	D	S	K	A	I	L	A	D	A	V	I	L	A	T	120
361	GGA	GCT	GTG	GCT	AAG	CGG	CTT	AGC	TTC	GTT	GGA	TCT	GGT	GAA	GGT	TCT	GGA	GGT	TTC	TGG	420
121	G	A	V	A	K	R	L	S	F	V	G	S	G	E	G	S	G	G	F	W	140
421	AAC	CGT	GGA	ATC	TCC	GCT	TGT	GCT	GTT	TGC	GAC	GGA	GCT	GCT	CCG	ATA	TTC	CGT	AAC	AAA	480
141	N	R	G	I	S	A	C	A	V	C	D	G	A	A	P	I	F	R	N	K	160
481	CCT	CTT	GCG	GTG	ATC	GGT	GGA	GGC	GAT	TCA	GCA	ATG	GAA	GAA	GCA	AAC	TTT	CTT	ACA	AAA	540
161	P	L	A	V	I	G	G	G	D	S	A	M	E	E	A	N	F	L	T	K	180
541	TAT	GGA	TCT	AAA	GTG	TAT	ATA	ATC	CAT	AGG	AGA	GAT	GCT	TTT	AGA	GCG	TCT	AAG	ATT	ATG	600
181	Y	G	S	K	V	Y	I	I	H	R	R	D	A	F	R	A	S	K	I	M	200
601	CAG	CAG	CGA	GCT	TTG	TCT	AAT	CCT	AAG	ATT	GAT	GTG	ATT	TGG	AAC	TCG	TCT	GTT	GTG	GAA	660
201	Q	Q	R	A	L	S	N	P	K	I	D	V	I	W	N	S	S	V	V	E	220
661	GCT	TAT	GGA	GAT	GGA	GAA	AGA	GAT	GTG	CTT	GGA	GGA	TTG	AAA	GTG	AAG	AAT	GTG	GTG	ACC	720
221	A	Y	G	D	G	E	R	D	V	L	G	G	L	K	V	K	N	V	V	T	240
721	GGA	GAT	GTT	TCT	GAT	TTA	AAA	GTT	TCT	GGA	TTG	TTC	TTT	GCT	ATT	GGT	CAT	GAG	CCA	GCT	780
241	G	D	V	S	D	L	K	V	S	G	L	F	F	A	I	G	H	E	P	A	260
781	ACC	AAG	TTT	TTG	GAT	GGT	GGT	GTT	GAG	TTA	GAT	TCG	GAT	GGT	TAT	GTT	GTC	ACG	AAG	CCT	840
261	T	K	F	L	D	G	G	V	E	L	D	S	D	G	Y	V	V	T	K	P	280
841	GGT	ACT	ACA	CAG	ACT	AGC	GTT	CCC	GGA	GTT	TTC	GCT	GCG	GGT	GAT	GTT	CAG	GAT	AAG	AAG	900
281	G	T	T	Q	T	S	V	P	G	V	F	A	A	G	D	V	Q	D	K	K	300
901	TAT	AGG	CAA	GCC	ATC	ACT	GCT	GCA	GGA	ACT	GGG	TGC	ATG	GCA	GCT	TTG	GAT	GCA	GAG	CAT	960
301	Y	R	Q	A	I	T	A	A	G	T	G	C	M	A	A	L	D	A	E	H	320
961	TAC	TTA	CAA	GAG	ATT	GGA	TCT	CAG	CAA	GGT	AAG	AGT	GAT	TGA						1002	
321	Y	L	Q	E	I	G	S	Q	Q	G	K	S	D	*						334	

FIG. 10



Title: PREPARATION OF
THIOREDOXIN AND THIOREDOXIN
REDUCTASE ON OIL BODIES
Inventor(s): Maurice M. MOLONEY et al.
Appl. No.: 09/897,425

	10	20	30	40	50	60
TRANSLATION OF ATTHIREDB	MNGLETHNTRLCIVSGPAAHTAAIYAARAELKPLLFEGLMANDIAPGGQLNQPP-RENF					
TRANSLATION OF TR	MNGLETHNTRLCIVSGPAAHTAAIYAARAELKPLLFEGLMANDIAPGGQLTTTDVENF					
	70	80	90	100	110	120
TRANSLATION OF ATTHIREDB	PGFPEGILGVELTDKFRKQSERFGTTIFTETVTKVDFSSKPFKLFTDSKAILADAVILAI					
TRANSLATION OF TR	PGFPEGILGVELTDKFRKQSERFGTTIFTETVTKVDFSSKPFKLFTDSKAILADAVILAT					
	130	140	150	160	170	180
TRANSLATION OF ATTHIREDB	GAVAKWLSEVGSGEVLGGUNNRGISAACAVCDGAAPIFRNKPLAVIGGGDSAMEEANFLTK					
TRANSLATION OF TR	GAVAKRLSFGSGEFGSGFWNRGISAACAVCDGAAPIFRNKPLAVIGGGDSAMEEANFLTK					
	190	200	210	220	230	240
TRANSLATION OF ATTHIREDB	YGSKVYIIDRRDAFRASKIMQQRALSNPKIDVIWNSSVVEAYGDGERDVLGGLKVKNVVT					
TRANSLATION OF TR	YGSKVYIIRRDAFRASKIMQQRALSNPKIDVIWNSSVVEAYGDGERDVLGGLKVKNVVT					
	250	260	270	280	290	300
TRANSLATION OF ATTHIREDB	GDVSDLKVSGLFFAIGHEPATKFLDGGVELSDGYVVTKGTTQTSVPGVFAAGDVQDKK					
TRANSLATION OF TR	GDVSDLKVSGLFFAIGHEPATKFLDGGVELSDGYVVTKGTTQTSVPGVFAAGDVQDKK					
	310	320	330	340	350	360
TRANSLATION OF ATTHIREDB	YRQAITAAGTGCMALDAEHYLQEIGSQQGKSD					
TRANSLATION OF TR	YRQAITAAGTGCMALDAEHYLQEIGSQQGKSD					

FIG. 11

PstI

1 ctgcaggattcattgtactcccagtatcattatagtgaaagtttggctctcgccgtggttttaccttat^{ta} 80
 81 aagggtttcac^taaaaattctggtatcattctacttacttgtacttaattctcataatcttggt^{aa}at 160
 161 tatcacgctccgcacacgat^{at}ccctaca^{aa}atttattttgttaacat^{tt}caaaccgcataaaatttat^{ga}agtc 240
 241 ccgtctat^{tt}aatgttagtcta^{ac}at^{tt}catatt^{ga}aaatataattacttaatttagcgttggtagaa^{ag}cataa 320
 321 tgatttattcttattcttcatataatgtt^{ta}atata^{ca}atataa^{ca}attcttac^{ctt}agaaggattccat 400
 401 ttatattt^{aaaa}atatttat^{ca}atattttcaaccacgt^{aa}atctcataata^{ag}ttgtt^{ca}aa^{ag}taataa 480
 481 aatttaactccataatttttattcgactgat^{ctt}aa^{ag}caacacc^{ag}t^gacacaactagccatttttcttgaat 560
 561 aaaaaa^{at}ccaaattatcattgtat^{ttttt}tata^{ca}at^{ga}aaattt^{ca}ccaaacaat^{catt}gtt^{gt}atttctgaag^{ca}a 640
 641 gtc^{at}gttat^gcaaaattctataattcc^{catt}gacactac^{gg}a^{gt}actgaagat^{ct}g^{ctt}acat^{gc}gagacat 720
 721 cttctaa^{ag}taattt^{ta}ataat^{gt}tactatattca^{ag}attt^{ca}at^{at}act^{ca}at^{at}tacttct^{aaaa}attaa 800
 801 ttagatataattt^{aa}atattactttttaattt^{ta}agtt^{ta}att^{gt}tgat^{tt}gtactattgatttatttctactat 880
 881 gtt^{aa}att^{gt}ttttagat^{gt}tt^{aa}agtaatata^{ag}taat^{gt}t^gat^{gt}tt^gat^{gt}tt^{acc}ctaaaccataa^{ac} 960
 961 tataagatttat^{gg}tgactaattt^{tc}atattt^{ct}atattt^{ct}tatt^{gt}tt^{ac}ttt^{ct}gg^tat^{gt}ccgtaactggaa 1040
 1041 ttactgtgggtg^{cc}atggcactctgtggctttgg^tcatgc^{at}ggat^{gt}ttgc^gcaagaaaaagaca^{aa}aca^{aa}ag 1120
 1121 aaaaaa^gaca^{aa}ac^{ag}agaca^{aa}ac^gcaat^caca^caca^cact^{ca}aa^{tt}act^cact^{gg}ct^gat^{ca}agat^cccgc^{gt}tc 1200
 1201 catgtat^{gt}t^{ct}aa^{at}g^{cc}at^gc^{ca}aa^gca^{ac}ac^{gt}g^{ct}ta^{ac}at^gc^{ac}t^{tt}aa^{at}g^gct^cacc^{at}ct^{ca}acc^{ac}caca 1280
 1281 aacacattgc^{ctttt}cttcatcatcaccacaaccac^ct^gtat^{at}att^catt^ctccg^{cc}acc^ct^{ca}attt^ct^{actt} 1360
 1361 caacacac^{gt}caac^ct^gcat^gc^{gt}t^{cat}ccc^{at}g^{cc}aa^{at}c^{tc}cat^gcat^{gtt}cc^{acc}ac^ctt^ct^cttatata 1440
 1441 atac^ctataaa^{at}ac^ct^{ta}at^cact^cact^cttt^{cat}cat^cccat^cc^{ca}g^gat^tact^ct^{act}act^ct^{act}tataata 1520
 1521 ccccaacccaa^{ct}cat^{at}t^{ca}at^{act}t^{act}t^{act} ATG GCT TCG GAA GGA CAA GTG ATC GCC TGC 1587
 1 M A S E E G Q V I A C 11
 1588 CAC ACC GTT GAG ACA TGG AAC GAG CAG CTT CAG AAG GCT AAT GAA TCC AAA ACT CTT GTG 1647
 12 H T V E T W N E Q L Q K A N E S K T L V 31
 1648 GTG GTT GAT TTC ACG GCT TCT TGG TGT GGA CCA TGT CGT TTC ATC GCT CCA TTC TTT GCT 1707
 32 V D F T A S W C G P C R F I A P F F A 51
 1708 GAT TTG GCT AAG AAA CTT CCT AAC GTG CTT TTC CTC AAG GTT GAT ACT GAT GAA TTG AAG 1767
 52 D L A K K L P N V L F L K V D T D E L K 11

FIG. 12



Title: PREPARATION OF
THIOREDOXIN AND THIOREDOXIN
REDUCTASE ON OIL BODIES
Inventor(s): Maurice M. MOLONEY et al
Appl. No.: 09/897,425

1768 TCG GTG GCA AGT GAT TGG GCG ATA CAG GCG ATG CCA ACC TTC ATG TTT TTG AAG GAA GGG 1827
 72 S V A S D W A I Q A M P T F M F L K E G 91
 1828 AAG ATT TTG GAC AAA GTT GTT GGA GCC AAG AAA GAT GAG CTT CAG TCT ACC ATT GCC AAA 1887
 92 K I L D K V V G A K K D E L Q S T I A K 111
 HindIII
 1888 CAC TTG GCT TAA gcttaataagtatgaactaaaatgcatgttagtgtaagagctatggagagcatggaatattgt 1963
 112 H L A * 115
 1964 atccgaccatgtAACGTTATAACTGAGCTCCATCTCACTTCTTCTATGAATAAACAAAGGATGTTATGATATATTAA 2043
 2044 cactctatctatgcaccttattgttctatgataaatttccttattattataaatcatctgaatcgtgacggcttatgg 2123
 2124 aatgcttcaaatagtacaaaaacaatgtgtactataagactttctaaacaattctaacttttagcattgtgaacgagaca 2203
 2204 taagtgttaagaagacataacaattataatggaagaagttgtccatttatattatattaccacttatgtatt 2283
 2284 atattaggatgttaaggagacataacaattataaagagagaagttgtatccatttatattataactacccatttat 2363
 2364 atattatacttatccacttatttaatgtcttataaggttgatccatgatattctaataatttttagttgatatgtat 2443
 2444 gaaagggtactattgaactctctactctgtataaagggtggatcatccttaaagtgggttatttaattttattgtct 2523
 2524 ctacagataaaaaaaaaattatgagtgggttataaggatttaatgtcataaataataataataataacat 2603
 2604 ataataatgtatataaatttattataatataacatttatctataaaaaagtaataattgtcataaatactataatcgt 2683
 2684 tttagcctgctggacgactctcaattttaaacgagagtaaacatattgactttttggttatttaacaaatttatt 2763
 2764 taacactatgtaaattttttttatcgcaaggaaataaaattaaatggagggacaatgggtgtccaatcct 2843
 2844 tataacaaccaacttccacaggaaggtcaggtcgcccacaacaaaaacaggcaaggaaatttttaattgggttgc 2923
 2924 ttgtttgtcataatttatgcagtaaaacactacacataacccttttagcagtagagcaatggttgaccgtgtc 3003
 3004 ctctttatttattttatcagcaaagaataaaataaaatgagacacttcaggatgttcaacccttatac 3083
 3084 aaaaccccaaaaacaagttcctagcaccctaccaactaaggtacc 3129
 KpnI

FIG. 12A



**Title: PREPARATION OF
THIOREDOXIN AND THIOREDOXIN
REDUCTASE ON OIL BODIES**
Inventor(s): Maurice M. MOLONEY et al
Appl. No.: 09/897,425

PstI

1_ctgcaggattcattgtactccagttatcattatagtgaaagtggctctcgccgtggttttacctctattta 80

81 aagggtttccacaaaaattctggtatcattctcactttacttgtacttaattctcataatcttggtgaard 160

161 tatcacgcttccgcacacgatatccctacaaatttattttgttaaacatttcaaaccgcataaaatttatgaagtc 240

241 ccgtctatcttaatgttagtctaacatttcatattgaaatataatttacttaatttagcgttggtagaaagcataa 320

321 tgatttattcttattcttcatataatgttaatatacataataaaacaaattcttaccttaagaaggattccat 400

401 tttatatttaaaaatatttatcaaatattttcaaccacgtaatctcataataaagtgttcaaaagtaataa 480

481 aatttaactccataatttttattcgactgatcttaagcaacacccagtgacacaactagccatttttcttgaat 560

561 aaaaaaatccaattatcattgtattttttatacatgaaaattcaccaacaatcattgtggatttctgaagcaa 640

641 gtcatgttatgaaaattctataattcccatttgacactacggaaactgaagatctgctttacatgcgagacat 720

721 cttctaaagtatTTtaataatgttactatattcaagattcatatatcaaactcaatattacttctaaaaattaa 800

801 ttagatataattaaaatattacttttaatttaagtttaattgttgaatttgtgactattgatttatttctactat 880

881 gtttaattgtttatagatagttaaagtaaatataagtaatgttagtagttagttagttagtaccctaaaccataaac 960

961 tataaaggatttatggtgactaatttcatatattcttattgctttacctttcttggatgtaaatccgtactggaa 1048

1041 ttactgtgggtgccatggcactctgtggctttggtcatgcatggatgcttcgcagaagaaaaagacaaagaacaaag 1120

1121 aaaaaagacaaaacagagagacaaaacgcaatcacacaaccaactcaaattagtcactggctgatcaaatcgccgcgtc 1200

1201 catgtatgtctaaatgccatgcaaaggcaacacgtgcttaacatgcactttaaatggctacccatctcaacccacacaca 1280

1281 aacacattgcctttcttcattcatcaccacaaccacctgtatataattcattcttccggcacctaattcttca 1360

1361 caacacacgtcaacctqcatatgcgtgtcatccatgccc aaatctccatgcatgttccaaccacccttctctttatata 1440

1441 atacctataaatacctctaataatcactcacttcattcatccatccatccagactactactactactataata 1520

1521 ccccaacccaactcatattcaatactactctact ATG GCG GAT ACA GCT AGA GGA ACC CAT CAC GAT 1587
1 M A D T A R G T H H D 11

1588 ATC ATC GGC AGA GAC CAG TAC CCG ATG ATG GGC CGA GAC CGA GAC CAG TAC CAG ATG TCC 1647
 12 I I G R D Q Y P M M G R D R D Q Y Q M S 31

1648	GGA	CGA	GGA	TCT	GAC	TAC	TCC	AAG	TCT	AGG	CAG	ATT	GCT	AAA	GCT	GCA	ACT	GCT	GTC	ACA	1707
32	G	R	G	S	D	Y	S	K	S	R	Q	I	A	K	A	A	T	A	V	T	51

1708 GCT GGT GGT TCC CTC CTT GTT CTC TCC AGC CTT ACC CTT GTT GGA ACT GTC ATA GCT TTG 1767
52 A G G S L L V L S S L T L V G T V I A A L 71

FIG. 13



Title: PREPARATION OF
THIOREDOXIN AND THIOREDOXIN
REDUCTASE ON OIL BODIES
Inventor(s): Maurice M. MOLONEY et al.
Appl. No.: 09/897,425

1768 ACT GTT GCA ACA CCT CTG CTC GTT ATC TTC AGC CCA ATC CTT GTC CCG GCT CTC ATC ACA 1827
72 T V A T P L L V I F S P I L V P A L I T 91
1828 GTT GCA CTC CTC ATC ACC GGT TTT CTT TCC TCT GGA GGG TTT GGC ATT GCC GCT ATA ACC 1887
92 V A L L I T G F L S S G G F G I A A I T 111
1888 GTT TTC TCT TGG ATT TAC AA gtaagcacacatttatcatcttacttcataatttgtcaatatgtcatgca 1960
112 V F S W I Y K 118
1961 tgtgttagccagtagcttggatcaatttttggcataacaatgtacaataagaattgcaattctaggaa 2040
2041 catttggtaactaaatcggaaatttgccttagcttagcttgaatgtgttatcatcttatataaggtaaaatgctt 2120
2121 ggtatgataccattgattgtgaatag G TAC GCA ACG GGA GAG CAC CCA CAG GGA TCA GAC AAG 2184
119 Y A T G E H P Q G S D K A Q D L K D R A Q 130
2185 TTG GAC AGT GCA AGG ATG AAG TTG GGA AGC AAA GCT CAG GAT CTG AAA GAC AGA GCT CAG 2244
131 L D S A R M K L G S K A Q D L K D R A Q 150
2245 TAC TAC GGA CAG CAA CAT ACT GGT GGG GAA CAT GAC CGT GAC CGT ACT CGT GGT GGC CAG 2304
151 Y Y G Q Q H T G G E H D R D R T R G G Q 170
NcoI
2305 CAC ACT ACC ATG GCT TCG GAA GAA GGA CAA GTG ATC GCC TGC CAC ACC GTT GAG ACA TGG 2364
171 H T T M A S E E G Q V I A C H T V E T W 190
2365 AAC GAG CAG CTT CAG AAG GCT AAT GAA TCC AAA ACT CTT GTG GTG GTT GAT TTC ACG GCT 2424
191 N E Q L Q K A N E S K T L V V V D F T A 210
2425 TCT TGG TGT GGA CCA TGT CGT TTC ATC GCT CCA TTC TTT GCT GAT TTG GCT AAG AAA CTT 2484
211 S W C G P C R F I A P F F A D L A K K L 230
2485 CCT AAC GTG CTT TTC CTC AAG GTT GAT ACT GAT GAA TTG AAG TCG GTG GCA AGT GAT TGG 2544
231 P N V L F L K V D T D E L K S V A S D W 250
2545 GCG ATA CAG GCG ATG CCA ACC TTC ATG TTT TTG AAG GAA GGG AAG ATT TTG GAC AAA GTT 2604
251 A I Q A M P T F M F L K E G K I L D K V 270
2605 GTT GGA GCC AAG AAA GAT GAG CTT CAG TCT ACC ATT GCC AAA CAC TTG GCT TAA gcttaata 2666
271 V G A K K D E L Q S T I A K H L A * 288
2667 agtatgaactaaatgcatgttagtgtaagagagctcatggagagcatggaatattgtatccgaccatgtaacagtataata 2746
2747 actgagctccatctcacttcttatgaataaacaaggatgttatgatataactcttatgcacatttattgt 2826
2827 tctatgataaatttcctcttattattataaatcatctgaatcgtgacggcttatggaatgctcaaatagtacaaaaca 2906
2907 aatgtgtactataagactttctaaacaattctaacttagcattgtgaacgagacataagtgttaagaagacataacaat 2986
2987 tataatggaagaagttgtccatttatattatattaccacttatgtattatattaggatgttaaggagacata 3066

FIG. 13A

APR 20 2004

Patent & Trademark Office 1905
Title: PREPARATION OF
THIOREDOXIN AND THIOREDOXIN
REDUCTASE ON OIL BODIES
Inventor(s): Maurice M. MOLONEY et al.
Appl. No.: 09/897,425

3067 acaattataaagagagaagttgtatccatttatattatatactacccatttatattatacttacccacttattta 3146
3147 atgtctttataagggttgcattcatgatattctaatatttagttgatgtatgaaagggtactattgaactct 3226
3227 tactctgtataaagggtggatcatccttaaagtgggtctatttaattttattgcttctacagataaaaaaaaaattatg 3306
3307 agttggttgataaaatattgaaggattaaataataaaataataacatataatatgtatataaaatttatt 3386
3387 ataatataacatttatctataaaaaagtaaatattgtcataaatctatacatcgtttagccttgctggacgactctcaa 3466
3467 ttattnaaacgagagtaaacatattgacttttggatttaacaaatttatttaacactatatgaaatttttttt 3546
3547 ttatcgcaaggaaataaaattaaatttaggagggacaatggtgtccatccttataacaaccaactccacaggaag 3626
3627 gtcaggtcggggacaacaaaaacaggcaaggaaatttttaattgggtgtcttgcataattatgcag 3706
3707 taacactacacataacccttttagcagtagagcaatgggtgaccgtgtgcttagcttctttattnnnnnatc 3786
3787 agcaaagaataaataaaataatgagacacttcaggatgttcaacccttatacaaaaacccaaaaacaagttccta 3866
3867 gcaccctaccaactaaggtaacc 3888

KpnI

FIG. 13B



Title: PREPARATION OF
THIOREDOXIN AND THIOREDOXIN
REDUCTASE ON OIL BODIES
Inventor(s): Maurice M. MOLONEY et al
Appl. No.: 09/897,425

FIG. 14



Title: PREPARATION OF
THIOREDOXIN AND THIOREDOXIN
REDUCTASE ON OIL BODIES
Inventor(s): Maurice M. MOLONEY et al.
Appl. No.: 09/897,425

1768	TCG	GTG	GCA	AGT	GAT	TGG	GCG	ATA	CAG	GCG	ATG	CCA	ACC	TTC	ATG	TTT	TTG	AAG	GAA	GGG	1827
72	S	V	A	S	D	W	A	I	Q	A	M	P	T	F	M	F	L	K	E	G	91
1828	AAG	ATT	TTG	GAC	AAA	GTT	GGA	GCC	AAG	AAA	GAT	GAG	CTT	CAG	TCT	ACC	ATT	GCC	AAA	1887	
92	K	I	L	D	K	V	V	G	A	K	K	D	E	L	Q	S	T	I	A	K	111
1888	CAC	TTG	GCT	ATG	GCG	GAT	ACA	GCT	AGA	GGA	ACC	CAT	CAC	GAT	ATC	ATC	GGC	AGA	GAC	CAG	1947
112	H	L	A	M	A	D	T	A	R	G	T	H	H	D	I	I	G	R	D	Q	131
1948	TAC	CCG	ATG	ATG	GGC	CGA	GAC	CGA	GAC	CAG	TAC	CAG	ATG	TCC	GGA	CGA	GGG	TCT	GAC	TAC	2007
132	Y	P	M	M	G	R	D	R	D	Q	Y	Q	M	S	G	R	G	S	D	Y	151
2008	TCC	AAG	TCT	AGG	CAG	ATT	GCT	AAA	GCT	GCA	ACT	GCT	GTC	ACA	GCT	GGT	GGT	TCC	CTC	CTT	2067
152	S	K	S	R	Q	I	A	K	A	A	T	A	V	T	A	G	G	S	L	L	171
2068	GTT	CTC	TCC	AGC	CTT	ACC	CTT	GTT	GGA	ACT	GTC	ATA	GCT	TTG	ACT	GTT	GCA	ACA	CCT	CTG	2127
172	V	L	S	S	L	T	L	V	G	T	V	I	A	L	T	V	A	T	P	L	191
2128	CTC	GTT	ATC	TTC	AGC	CCA	ATC	CTT	GTC	CCG	GCT	CTC	ATC	ACA	GTT	GCA	CTC	CTC	ATC	ACC	2187
192	L	V	I	F	S	P	I	L	V	P	A	L	I	T	V	A	L	L	I	T	211
2188	GGT	TTT	CTT	TCC	TCT	GGA	GGG	TTT	GGC	ATT	GCC	GCT	ATA	ACC	GTT	TTC	TCT	TGG	ATT	TAC	2247
212	G	F	L	S	S	G	G	F	G	I	A	A	I	T	V	F	S	W	I	Y	231
2248	AA	gtaagcacacatttatcatcttacttcataatttgtcaatatgtcatgtcatgtttggat	2326																		
232	K	232																			
2327	caatttttttggcataacaatgtacaataagaattcaattcttagggacatttggtaactaaatacgaat	2406																			
2407	ttgaccttagcttagttgaatgtgtctgttatcatcttatataggtaaaatgcttggtatgataccatttattgtgaa	2486																			
2487	tag	G	TAC	GCA	ACG	GGA	GAG	CAC	CCA	CAG	GGA	TCA	GAC	AAG	TTG	GAC	AGT	GCA	AGG	ATG	2544
233	Y	A	T	G	E	H	P	Q	G	S	D	K	L	D	S	A	R	M	250		
2545	AAG	TTG	GGA	AGC	AAA	GCT	CAG	GAT	CTG	AAA	GAC	AGA	GCT	CAG	TAC	TAC	GGA	CAG	CAA	CAT	2604
251	K	L	G	S	K	A	Q	D	L	K	D	R	A	Q	Y	Y	G	Q	Q	H	270
HindIII																					
2605	ACT	GGT	GGG	GAA	CAT	GAC	CGT	GAC	CGT	ACT	CGT	GGT	GGC	CAG	CAC	ACT	ACT	TAA	<u>gcttaata</u>	2666	
271	T	G	G	E	H	D	R	D	R	T	R	G	G	Q	H	T	T	*	288		
2667	agtatgaactaaaatgcatgttagtgtaagagctcatggagagcatggaatattgtatccgaccatgtaacagtataata	2746																			
2747	actgagctccatctcacttcttctatgaataaacaaggatgttatgatataacttacacttatctatgcacccattttgt	2826																			
2827	tctatgataaatttcttattattataatcatctgatctgtacggcttatggaatgctcaaatagtacaaaaca	2906																			
2907	aatgtgtactataagactttctaaacaattctaacttttagcattgtgaacgagacataagtgttaagaagacataacaat	2986																			
2987	tataatggaagaagttgtccatttatattatattaccacttatgtattataggatgttaaggagacata	3066																			

FIG. 14A



Title: PREPARATION OF
THIOREDOXIN AND THIOREDOXIN
REDUCTASE ON OIL BODIES
Inventor(s): Maurice M. MOLONEY et al.
Appl. No.: 09/897,425

3067 acaattataaagagagaagttgtatccatttatattatatactacccatttatattatacttacccacttattta 3146
3147 atgtctttataagggttgcattatctaatattttagttgatgtatgaaagggtactattgaactctct 3226
3227 tactctgtataaagggttgcattatctaatattttagttgatgtatgaaagggtactattgaactctct 3306
3307 agttgggttgcataaaatattgaaggattaaataataataataataataataatgtatataaatttatt 3386
3387 ataatataacatttatctataaaaagtaaatattgtcataatctatacataatcgtttagccttgctggacgactctcaa 3466
3467 ttatttaaacgagagtaaacatatttgacttttggttatTTAACAAATTATTAAACACTATATGAAATTTTTT 3546
3547 ttatcggcaaggaaataaaattaaatttaggaggggacaatggtgtgtccaatcctatacaaccaactccacaggaag 3626
3627 gtcaggtcgggacaacaaaaacaggcaaggaaatttttaatttgggtgtcttgcataattatgcag 3706
3707 taaaacactacacataacccttttagcagtagagcaatggtgaccgtgtcttagcttctttatTTATTTTATC 3786
3787 agcaaagaataaataaaataatgagacacttcaggatgttcaaccctatacaaaacccaaaaacaagttccta 3866
3867 gcaccctaccaactaggtacc 3888

KpnI

FIG. 14B



Title: PREPARATION OF
THIOREDOXIN AND THIOREDOXIN
REDUCTASE ON OIL BODIES
Inventor(s): Maurice M. MOLONEY et al
Appl. No.: 09/897,425

PstI

FIG. 15



Title: PREPARATION OF
THIOREDOXIN AND THIOREDOXIN
REDUCTASE ON OIL BODIES
Inventor(s): Maurice M. MOLONEY et al.
Appl. No.: 09/897,425

1768	CTC	ACT	GAC	AAA	TTC	CGT	AAA	CAA	TCG	GAG	CGA	TTC	GGT	ACT	ACG	ATA	TTT	ACA	GAG	ACG	1827
72	L	T	D	K	F	R	K	Q	S	E	R	F	G	T	T	I	F	T	E	T	91
1828	GTG	ACG	AAA	GTC	GAT	TTC	TCT	TCG	AAA	CCG	TTT	AAG	CTA	TTC	ACA	GAT	TCA	AAA	GCC	ATT	1887
92	V	T	K	V	D	F	S	S	K	P	F	K	L	F	T	D	S	K	A	I	111
1888	CTC	GCT	GAC	GCT	GTG	ATT	CTC	GCT	ACT	GGA	GCT	GTG	GCT	AAG	CGG	CTT	AGC	TTC	GTT	GGA	1947
112	L	A	D	A	V	I	L	A	T	G	A	V	A	K	R	L	S	F	V	G	131
1948	TCT	GGT	GAA	GGT	TCT	GGA	GGT	TTC	TGG	AAC	CGT	GGA	ATC	TCC	GCT	TGT	GCT	GTT	TGC	GAC	2007
132	S	G	E	G	S	G	G	F	W	N	R	G	I	S	A	C	A	V	C	D	151
2008	GGA	GCT	GCT	CCG	ATA	TTC	CGT	AAC	AAA	CCT	CTT	GCG	GTG	ATC	GGT	GGA	GGC	GAT	TCA	GCA	2067
152	G	A	A	P	I	F	R	N	K	P	L	A	V	I	G	G	G	D	S	A	171
2068	ATG	GAA	GAA	GCA	AAC	TTT	CTT	ACA	AAA	TAT	GGA	TCT	AAA	GTG	TAT	ATA	ATC	CAT	AGG	AGA	2127
172	M	E	E	A	N	F	L	T	K	Y	G	S	K	V	Y	I	I	H	R	R	191
2128	GAT	GCT	TTT	AGA	GCG	TCT	AAG	ATT	ATG	CAG	CAG	CGA	GCT	TTG	TCT	AAT	CCT	AAG	ATT	GAT	2187
92	D	A	F	R	A	S	K	I	M	Q	Q	R	A	L	S	N	P	K	I	D	211
2188	GTG	ATT	TGG	AAC	TCG	TCT	GTT	GTG	GAA	GCT	TAT	GGA	GAT	GGA	GAA	AGA	GAT	GTG	CTT	GGA	2247
212	V	I	W	N	S	S	V	V	E	A	Y	G	D	G	E	R	D	V	L	G	231
2248	GGA	TTG	AAA	GTG	AAG	AAT	GTG	GTT	ACC	GGA	GAT	GTT	TCT	GAT	TTA	AAA	GTT	TCT	GGA	TTG	2307
232	G	L	K	V	K	N	V	V	T	G	D	V	S	D	L	K	V	S	G	L	251
2308	TTC	TTT	GCT	ATT	GGT	CAT	GAG	CCA	GCT	ACC	AAG	TTT	TTG	GAT	GGT	GGT	GTT	GAG	TTA	GAT	2367
252	F	F	A	I	G	H	E	P	A	T	K	F	L	D	G	G	V	E	L	D	271
2368	TCG	GAT	GGT	TAT	GTT	GTC	ACG	AAG	CCT	GGT	ACT	ACA	CAG	ACT	AGC	GTT	CCC	GGA	GTT	TTC	2427
272	S	D	G	Y	V	V	T	K	P	G	T	T	Q	T	S	V	P	G	V	F	291
2428	GCT	GCG	GGT	GAT	GTT	CAG	GAT	AAG	AAG	TAT	AGG	CAA	GCC	ATC	ACT	GCT	GCA	GGA	ACT	GGG	2487
292	A	A	G	D	V	Q	D	K	K	Y	R	Q	A	I	T	A	A	G	T	G	311
2488	TGC	ATG	GCA	GCT	TTG	GAT	GCA	GAG	CAT	TAC	TTA	CAA	GAG	ATT	GGA	TCT	CAG	CAA	GGT	AAG	2547
312	C	M	A	A	L	D	A	E	H	Y	L	Q	E	I	G	S	Q	Q	G	K	331
2548	AGT	GAT	TGA	agcttaataagtatgaactaaaatgcatgttagtgtaagagctcatggagagcatggatatattgtatc																	2624
332	S	D	*	HindIII																	334
2625	cgaccatgtaacagtataataactgagctccatctcacttcttatgaataaaacaaaggatgttatgatataacac	c	2704																		
2705	tctatctatgcaccttattgttctatgataaattcctttattattataatcatctgaatcgtgacggcttatgaa	t	2784																		
2785	gcttcaaataatgtacaaaacaaatgttactataagactttctaaacaattctaaacttttagcattgtgaacgagacataa	c	2864																		
2865	gtgttaagaagacataacaattataatggaagaagttgtctcatttatattatattacccacttatgtattataacac	c	2944																		

FIG. 15A

2945 ttaggatgttaaggagacataacaattataaagagagaagttgtatccatttatattatactacccatttatata 3024
3025 ttatacttatccacttatttaatgtctttataaggttgcattatctatatttttagttgatgtatgaa 3104
3105 aggtactatttgaactctctactctgtataaagggtggatcatccttaaagtggctatttaattttattgctt 3184
3185 acagataaaaaaaaaattatgagttggttgataaaatattgaaggattaaataataaataataaataacatata 3264
3265 atatatgtatataaatttattataatataacattatctataaaaaagtaaatattgtcataatctatacataatcgta 3344
3345 gccttgctggacactctcaattattaaacgagagtaaacatattgactttggatttaacaaattattattaa 3424
3425 cactatatgaaattttttttatcgcaaggaataaaatttaggaggacaatgggtgtccaaatcctt 3504
3505 acaaccaactccacaggaaggcaggtcgggacaacaaaaaaaaacaggcaaggaaatttttaattgggtgtctt 3584
3585 ttgcataatttatgcagtaaaacactacacataacccttttagcagtagagcaatggtgaccgtgtcttagtt 3664
3665 ctttatattttatcgcaagaataaaaatgagacacttcaggatgttcaacccttataaa 3744
3745 accccaaaaacaagttcctagcaccctaccaactaaggtacc 3787

KpnI

FIG. 15B



Title: PREPARATION OF
THIOREDOXIN AND THIOREDOXIN
REDUCTASE ON OIL BODIES
Inventor(s): Maurice M. MOLONEY et al.
Appl. No.: 09/897,425

PstI

FIG. 16



Title: PREPARATION OF
THIOREDOXIN AND THIOREDOXIN
REDUCTASE ON OIL BODIES
Inventor(s): Maurice M. MOLONEY et al
Appl. No.: 09/897,425

52	A	G	G	S	L	L	V	L	S	S	L	T	L	V	G	T	V	I	A	L	71	
1768	ACT	GTT	GCA	ACA	CCT	CTG	CTC	GTT	ATC	TTC	AGC	CCA	ATC	CTT	GTC	CCG	GCT	CTC	ATC	ACA	1827	
72	T	V	A	T	P	L	L	V	I	F	S	P	I	L	V	P	A	L	I	T	91	
1828	GTT	GCA	CTC	CTC	ATC	ACC	GGT	TTT	CTT	TCC	TCT	GGA	GGG	TTT	GGC	ATT	GCC	GCT	ATA	ACC	1887	
92	V	A	L	L	I	T	G	F	L	S	S	G	G	F	G	I	A	A	I	T	111	
1888	GTT	TTC	TCT	TGG	ATT	TAC	AA	gtaagcacacatttatcatcttacttcataatttgtcaatatgtcatgca														1960
112	V	F	S	W	I	Y	K															118
1961	tgtgttgagccagtagctttggatcaatttttgtcgaataacaaatgtacaataaagaattgcaaattctaggaa																				2040	
2041	catttggtaactaaatacgaaattgacctagctagcttgaatgtgtctgtatcatctata>tagtaaaatgctt																				2120	
2121	ggtatgatacctattgattgtgaatag																				2184	
119																					130	
2185	TTG	GAC	AGT	GCA	AGG	ATG	AAG	TTG	GGA	AGC	AAA	GCT	CAG	GAT	CTG	AAA	GAC	AGA	GCT	CAG	2244	
131	L	D	S	A	R	M	K	L	G	S	K	A	Q	D	L	K	D	R	A	Q	150	
2245	TAC	TAC	GGA	CAG	CAA	CAT	ACT	GGT	GGG	GAA	CAT	GAC	CGT	GAC	CGT	ACT	CGT	GGT	GGC	CAG	2304	
151	Y	Y	G	Q	Q	H	T	G	G	E	H	D	R	D	R	T	R	G	G	Q	170	
2305	CAC	ACT	ACC	ATG	AAT	GGT	CTC	GAA	ACT	CAC	AAC	ACA	AGG	CTC	TGT	ATC	GTA	GGA	AGT	GGC	2364	
171	H	T	T	M	N	G	L	E	T	H	N	T	R	L	C	I	V	G	S	G	190	
2365	CCA	GCG	GCA	CAC	ACG	GCG	GCG	ATT	TAC	GCA	GCT	AGG	GCT	GAA	CTT	AAA	CCT	CTT	CTC	TTC	2424	
191	P	A	A	H	T	A	A	I	Y	A	A	R	A	E	L	K	P	L	L	F	210	
2425	GAA	GGA	TGG	ATG	GCT	AAC	GAC	ATC	GCT	CCC	GGT	GGT	CAA	CTA	ACA	ACC	ACC	ACC	GAC	GTC	2484	
211	E	G	W	M	A	N	D	I	A	P	G	G	Q	L	T	T	T	T	D	V	230	
2485	GAG	AAT	TTC	CCC	GGA	TTT	CCA	GAA	GGT	ATT	CTC	GGA	GTA	GAG	CTC	ACT	GAC	AAA	TTC	CGT	2544	
231	E	N	F	P	G	F	P	E	G	I	L	G	V	E	L	T	D	K	F	R	250	
2545	AAA	CAA	TCG	GAG	CGA	TTC	GGT	ACT	ACG	ATA	TTT	ACA	GAG	ACG	GTG	ACG	AAA	GTC	GAT	TTC	2604	
251	K	Q	S	E	R	F	G	T	T	I	F	T	E	T	V	T	K	V	D	F	270	
2605	TCT	TCG	AAA	CCG	TTT	AAG	CTA	TTC	ACA	GAT	TCA	AAA	GCC	ATT	CTC	GCT	GAC	GCT	GTG	ATT	2664	
271	S	S	K	P	F	K	L	F	T	D	S	K	A	I	L	A	D	A	V	I	290	
2665	CTC	GCT	ACT	GGA	GCT	GTG	GCT	AAG	CGG	CTT	AGC	TTC	GTT	GGA	TCT	GGT	GAA	GGT	TCT	GGA	2724	
291	L	A	T	G	A	V	A	K	R	L	S	F	V	G	S	G	E	G	S	G	310	
2725	GGT	TTC	TGG	AAC	CGT	GGG	ATC	TCC	GCT	TGT	GCT	GTT	TGC	GAC	GGG	GCT	CCG	ATA	TTC	2784		
311	G	F	W	N	R	G	I	S	A	C	A	V	C	D	G	A	A	P	I	F	330	
2785	CGT	AAC	AAA	CCT	CTT	GCG	GTG	ATC	GGT	GGA	GGC	GAT	TCA	GCA	ATG	GAA	GAA	GCA	AAC	TTT	2844	
331	R	N	K	P	L	A	V	I	G	G	G	D	S	A	M	E	E	A	N	F	350	

FIG. 16A



**Title: PREPARATION OF
THIOREDOXIN AND THIOREDOXIN
REDUCTASE ON OIL BODIES**
Inventor(s): Maurice M. MOLONEY et al.
Appl. No.: 09/897,425

FIG. 16B



Title: PREPARATION OF
THIOREDOXIN AND THIOREDOXIN
REDUCTASE ON OIL BODIES
Inventor(s): Maurice M. MOLONEY et al.
Appl. No.: 09/897,425

4288 aggtcgggacaacaaaaacaggcaagggaaatttttaattgggtgtcttgctgcataatttatgcagtaa 4367
4368 aacactacacataacccttttagcagtagagcaatggttgaccgtgtgcttagcttctttatttattttatcagc 4447
4448 aaagaataaataaaataaaatgagacacttcaggatgttcaacccttataaaaaacccaaaaacaagttcctagca 4527
4528 ccctaccaactaaggtacc 4546
KpnI

FIG. 16C



Title: PREPARATION OF
THIOREDOXIN AND THIOREDOXIN
REDUCTASE ON OIL BODIES
Inventor(s): Maurice M. MOLONEY et al
Appl. No.: 09/897,425

FIG. 17



Title: PREPARATION OF
THIOREDOXIN AND THIOREDOXIN
REDUCTASE ON OIL BODIES
Inventor(s): Maurice M. MOLONEY et al.
Appl. No.: 09/897,425

1768	CTC	ACT	GAC	AAA	TTC	CGT	AAA	CAA	TCG	GAG	CGA	TTC	GGT	ACT	ACG	ATA	TTT	ACA	GAG	ACG	1827
72	L	T	D	K	F	R	K	Q	S	E	R	F	G	T	T	I	F	T	E	T	91
1828	GTG	ACG	AAA	GTC	GAT	TTC	TCT	TCG	AAA	CCG	TTT	AAG	CTA	TTC	ACA	GAT	TCA	AAA	GCC	ATT	1887
92	V	T	K	V	D	F	S	S	K	P	F	K	L	F	T	D	S	K	A	I	111
1888	CTC	GCT	GAC	GCT	GTG	ATT	CTC	GCT	ACT	GGG	GCT	GTG	GCT	AAG	CGG	CTT	AGC	TTC	GTT	GGA	1947
112	L	A	D	A	V	I	L	A	T	G	A	V	A	K	R	L	S	F	V	G	131
1948	TCT	GGT	GAA	GGT	TCT	GGG	GGT	TTC	TGG	AAC	CGT	GGG	ATC	TCC	GCT	TGT	GCT	GTT	TGC	GAC	2007
132	S	G	E	G	S	G	G	F	W	N	R	G	I	S	A	C	A	V	C	D	151
2008	GGA	GCT	GCT	CCG	ATA	TTC	CGT	AAC	AAA	CCT	CTT	GCG	GTG	ATC	GGT	GGG	GAT	TCA	GCA	2067	
152	G	A	A	P	I	F	R	N	K	P	L	A	V	I	G	G	G	D	S	A	171
2068	ATG	GAA	GAA	GCA	AAC	TTT	CTT	ACA	AAA	TAT	GGG	TCT	AAA	GTG	TAT	ATA	ATC	CAT	AGG	AGA	2127
172	M	E	E	A	N	F	L	T	K	Y	G	S	K	V	Y	I	I	H	R	R	191
2128	GAT	GCT	TTT	AGA	GCG	TCT	AAG	ATT	ATG	CAG	CAG	CGA	GCT	TTG	TCT	AAT	CCT	AAG	ATT	GAT	2187
192	D	A	F	R	A	S	K	I	M	Q	Q	R	A	L	S	N	P	K	I	D	211
2188	GTG	ATT	TGG	AAC	TCG	TCT	GTT	GTG	GAA	GCT	TAT	GGG	GAT	GGA	GAA	AGA	GAT	GTG	CTT	GGA	2247
212	V	I	W	N	S	S	V	V	E	A	Y	G	D	G	E	R	D	V	L	G	231
2248	GGA	TTG	AAA	GTG	AAG	AAT	GTG	GTT	ACC	GGG	GAT	GTT	TCT	GAT	TTA	AAA	GTT	TCT	GGA	TTG	2307
232	G	L	K	V	K	N	V	V	T	G	D	V	S	D	L	K	V	S	G	L	251
2308	TTC	TTT	GCT	ATT	GGT	CAT	GAG	CCA	GCT	ACC	AAG	TTT	TTG	GAT	GGT	GGT	GTT	GAG	TTA	GAT	2367
252	F	F	A	I	G	H	E	P	A	T	K	F	L	D	G	G	V	E	L	D	271
2368	TCG	GAT	GGT	TAT	GTT	GTC	ACG	AAG	CCT	GGT	ACT	ACA	CAG	ACT	AGC	GTT	CCC	GGA	GTT	TTC	2427
272	S	D	G	Y	V	V	T	K	P	G	T	T	Q	T	S	V	P	G	V	F	291
2428	GCT	GCG	GGT	GAT	GTT	CAG	GAT	AAG	AAG	TAT	AGG	CAA	GCC	ATC	ACT	GCT	GCA	GGA	ACT	GGG	2487
292	A	A	G	D	V	Q	D	K	K	Y	R	Q	A	I	T	A	A	G	T	G	311
2488	TGC	ATG	GCA	GCT	TTG	GAT	GCA	GAG	CAT	TAC	TTA	CAA	GAG	ATT	GGA	TCT	CAG	CAA	GGT	AAG	2547
312	C	M	A	A	L	D	A	E	H	Y	L	Q	E	I	G	S	Q	Q	G	K	331
2548	AGT	GAT	ATG	GCG	GAT	ACA	GCT	AGA	GGA	ACC	CAT	CAC	GAT	ATC	ATC	GGC	AGA	GAC	CAG	TAC	2607
332	S	D	M	A	D	T	A	R	G	T	H	H	D	I	I	G	R	D	Q	Y	351
2608	CCG	ATG	ATG	GGC	CGA	GAC	CGA	GAC	CAG	TAC	CAG	ATG	TCC	GGA	CGA	GGA	TCT	GAC	TAC	TCC	2667
352	P	M	M	G	R	D	R	D	Q	Y	Q	M	S	G	R	G	S	D	Y	S	371
2668	AAG	TCT	AGG	CAG	ATT	GCT	AAA	GCT	GCA	ACT	GCT	GTC	ACA	GCT	GGT	GGT	TCC	CTC	CTT	GTT	2727
372	K	S	R	Q	I	A	K	A	A	T	A	V	T	A	G	G	S	L	L	V	391

FIG. 17A



Title: PREPARATION OF
THIOREDOXIN AND THIOREDOXIN
REDUCTASE ON OIL BODIES
Inventor(s): Maurice M. MOLONEY et al.
Appl. No.: 09/897,425

2728	CTC	TCC	AGC	CTT	ACC	CTT	GTT	GGA	ACT	GTC	ATA	GCT	TTG	ACT	GTT	GCA	ACA	CCT	CTG	CTC	2787	
392	L	S	S	L	T	L	V	G	T	V	I	A	L	T	V	A	T	P	L	L	411	
2788	GTT	ATC	TTC	AGC	CCA	ATC	CTT	GTC	CCG	GCT	CTC	ATC	ACA	GTT	GCA	CTC	CTC	ATC	ACC	GGT	2847	
412	V	I	F	S	P	I	L	V	P	A	L	I	T	V	A	L	L	I	T	G	431	
2848	TTT	CTT	TCC	TCT	GGA	GGG	TTT	GGC	ATT	GCC	GCT	ATA	ACC	GTT	TTC	TCT	TGG	ATT	TAC	AA	g	2907
432	F	L	S	S	G	G	F	G	I	A	A	I	T	V	F	S	W	I	Y	K	451	
2908	taagcacacatttatcatcttacttcataatttgcaatatgtcatgtcatgtttagccagtagcttggatcaat																				2987	
2988	tttttggtcaataacaaatgtacaataagaattgcaaattctaggaaacattggtaactaaatacgaaaatttga																				3067	
3068	cctagcttagttgaatgtgtctgttatcatctatataggtaaaatgcttggtatgatacctattgattgtgaatag																				3146	
3147	G	TAC	GCA	ACG	GGA	GAG	CAC	CCA	CAG	GGA	TCA	GAC	AAG	TTG	GAC	AGT	GCA	AGG	ATG	AAG	3204	
452	Y	A	T	G	E	H	P	Q	G	S	D	K	L	D	S	A	R	M	K	470		
3205	TTG	GGA	AGC	AAA	GCT	CAG	GAT	CTG	AAA	GAC	AGA	GCT	CAG	TAC	TAC	GGA	CAG	CAA	CAT	ACT	3264	
471	L	G	S	K	A	Q	D	L	K	D	R	A	Q	Y	Y	G	Q	Q	H	T	490	
3265	GGT	GGG	GAA	CAT	GAC	CGT	GAC	CGT	ACT	CGT	GGT	GGC	CAG	CAC	ACT	ACT	TAA	<u>qcttaataagta</u>			3327	
491	G	G	E	H	D	R	D	R	T	R	G	G	Q	H	T	T	*	HindIII			507	
3328	tgaactaaaatgcattgttaggttaagagactcatggagagcatgaaatattgtatccgaccatgtacagtataactg																				3407	
3408	agctccatctcacttcttatgaataaacaaggatgttatgatataactctatctatgcaccttattgttcta																				3487	
3488	tgataaaattccctttattattataatcatctgaatcgtgacggcttatgaaatgctcaaatagtacaaaaacaaatg																				3567	
3568	tgtactataagactttctaaacaattctaacttttagcattgtgaacgagacataagtgttaagaagacataacaattata																				3647	
3648	atggaagaagttgtccatttatattatattaccacttatgtattatattaggatgttaaggagacataacaa																				3727	
3728	ttataaagagagaagttgtatccatttatattataactacccatttatattataacttatccacttatttaatgt																				3807	
3808	ctttataaggttcatgatattctaatatttttagttgatgtatgaaagggtactattgaactcttact																				3887	
3888	ctgtataaagggttcatcctaaagtggctatttaattttattgcttctacagataaaaaaaaaattatgagtt																				3967	
3968	ggtttgataaaatattgtaggattaaaataataaaataataacatataatataatgtatataaaatttattataa																				4047	
4048	tataacatttatctataaaaaagtaaatattgtcataaatctatacaatcgtagcctgctggacgactctcaattat																				4127	
4128	ttaaacgagactaacatatttgacttttggttatttaacaattatttaacactatatagtaaattttttttta																				4207	
4208	tcggcaaggaaataaaattaaatttaggaggacatgggtgtccaaatccttataacaaccaacttcacaggaaggta																				4287	

FIG. 17B



Q1P E
APR 29 2004
JC61
U.S. PATENT & TRADEMARK OFFICE
Title: PREPARATION OF
THIOREDOXIN AND THIOREDOXIN
REDUCTASE ON OIL BODIES
Inventor(s): Maurice M. MOLONEY et al.
Appl. No.: 09/897,425

4288 ggtcgggacaacaaaaacaggcaaggaaatttttaattgggtgtttgtcataattatgcagtaaa 4367
4368 acactacacataacccttttagcagttagcaatggtgaccgtgtcattagcttctttatttatccccatcagca 4447
4448 aagaataaataaaataaaatgagacacttcaggatgttcaacccttataaaaaacccaaaaacaagttcctagcac 4527
4528 cctaccaactaaggtacc 4545
KpnI

FIG. 17C

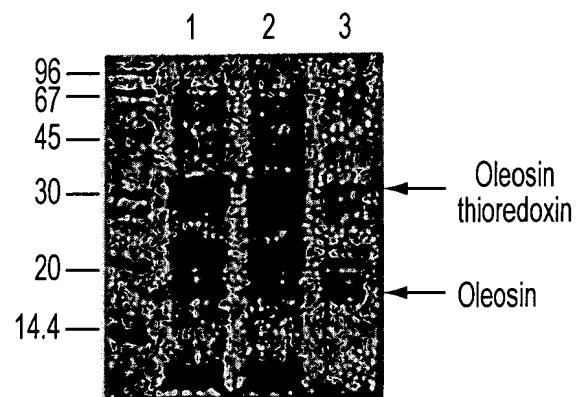


FIG. 18A

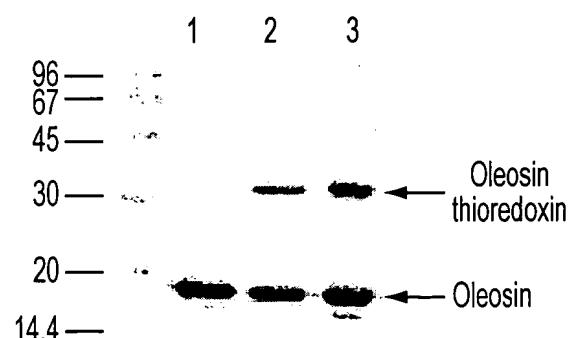


FIG. 18B



Title: PREPARATION OF
THIOREDOXIN AND THIOREDOXIN
REDUCTASE ON OIL BODIES
Inventor(s): Maurice M. MOLONEY et al.
Appl. No.: 09/897,425

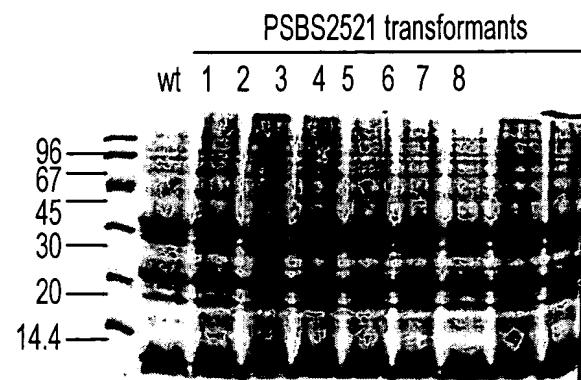


FIG. 19A

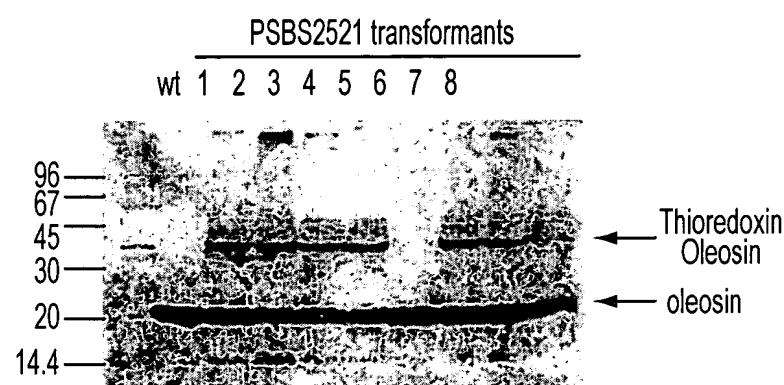


FIG. 19B



Title: PREPARATION OF
THIOREDOXIN AND THIOREDOXIN
REDUCTASE ON OIL BODIES
Inventor(s): Maurice M. MOLONEY et al.
Appl. No.: 09/897,425

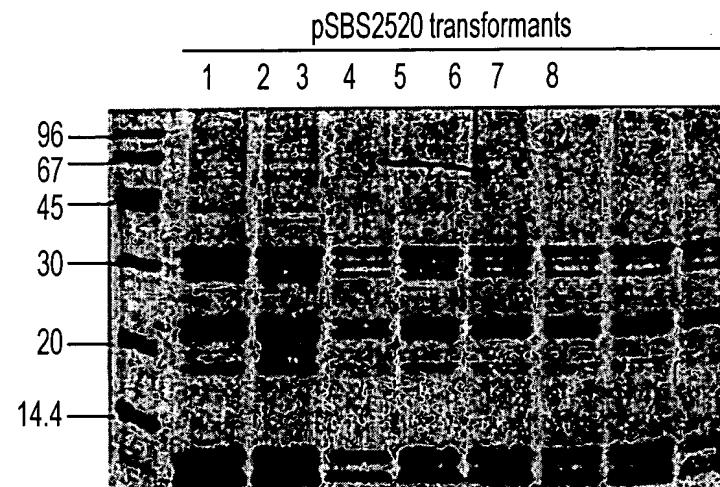


FIG. 20A

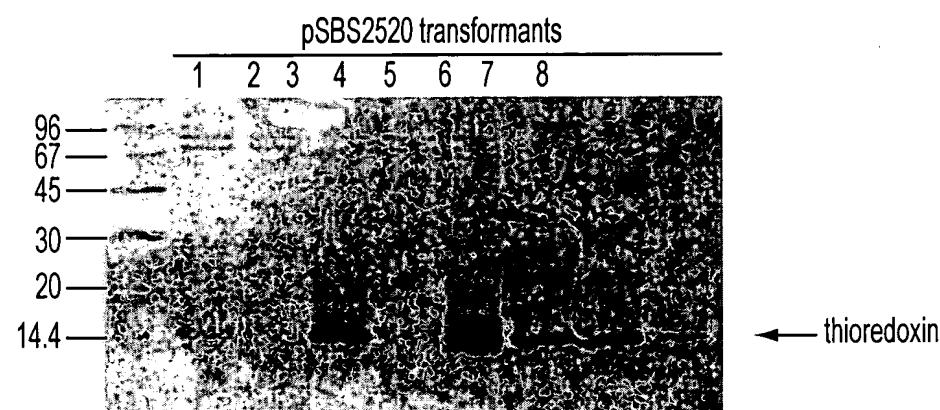


FIG. 20B

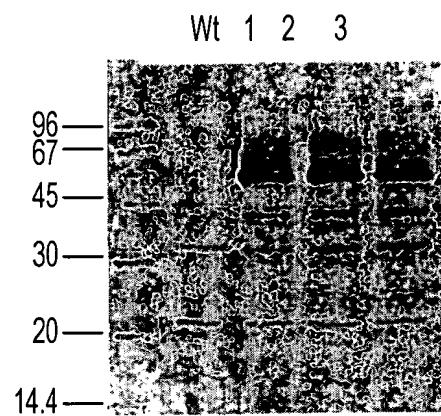


FIG. 21A



FIG. 21B

Patent & Trademark Office 1981
APR 29 2004
G I P E JCB1
Title: PREPARATION OF
THIOREDOXIN AND THIOREDOXIN
REDUCTASE ON OIL BODIES
Inventor(s): Maurice M. MOLONEY et al.
Appl. No.: 09/897,425

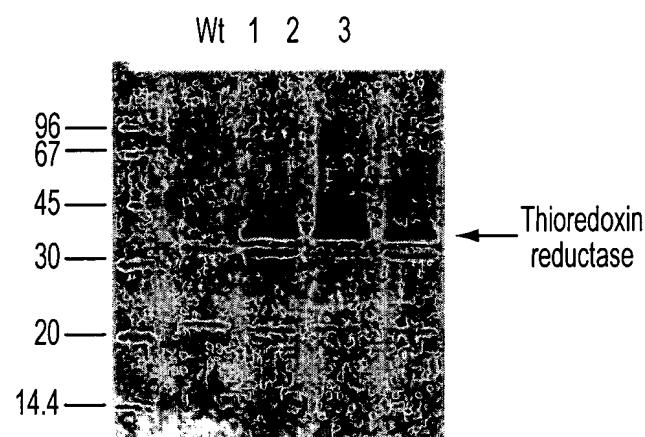


FIG. 22



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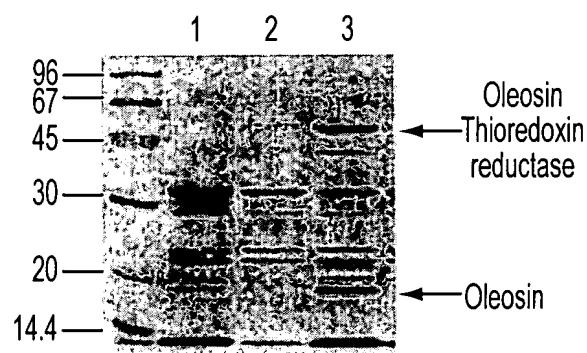


FIG. 23A

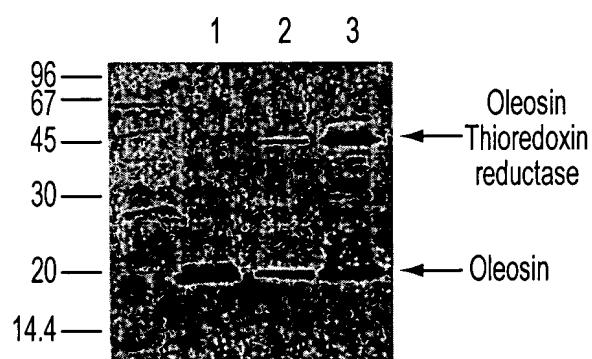


FIG. 23B